Preface

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Biographical notes: Ravi Patankar graduated from the Indian Institute of Technology, Bombay with a five-year integrated Master of Technology degree in mechanical engineering in 1994. In 1999, he earned a PhD in mechanical engineering from The Pennsylvania State University. He worked as a Project Engineer at Delphi Corporation's Steering Headquarters in Saginaw, Michigan from 1999–2001. From 2001 to 2004, he was an Assistant Professor of mechanical engineering–engineering mechanics at Michigan Technological University. Currently, he is an Adjunct Faculty at Michigan Technological University and a Senior Research Scientist at Intelligent Automation, Inc. of Rockville, Maryland. Dr Patankar is a member of IEEE and SAE.

Tomy Sebastian received his Bachelors degree in electrical engineering from the Regional Engineering College, Calicut, India, in 1979; his MS degree from the Indian Institute of Technology, Madras, India, in 1982; his MASc and PhD degrees from the University of Toronto, Canada, respectively in 1984 and 1986 both in electrical engineering. He was with the Research and Applied Technology Division of Black and Decker Corporation from 1987–1992. In 1992, he joined the Delphi Saginaw Steering Systems, where he is currently the Chief Scientist. Dr Sebastian is the Chairman of the Industrial Power Conversion Systems Department of the IEEE Industry Applications Society. He is also an Adjunct Faculty at the Ohio State University and a Fellow of IEEE.

Advances in hybrid control theory, fault-tolerant control, communication networks, power electronics, computing capability and actuator design are moving the control of vehicle dynamics from passive control to active control. Integration of steering, braking and other controls provides considerably more control over vehicle stability and performance compared to the passive systems. These types of integrated control

systems allow the vehicle to be more 'intelligent', enhancing passenger safety and enabling new functionalities. This active control is the foundation of the autonomous or unmanned vehicles of the future.

This special issue on 'Intelligent Vehicle Systems' has eight papers, which cover various dimensions that enable 'intelligence' in vehicle systems. Two of the papers cover the issues associated with actuators for braking and steering applications. Two of the papers deal with the audible noise associated with the vehicles. Two papers discuss autonomous vehicle applications. There are two papers on mobile autonomous robots; one of them has proposed optimal control of discrete event system via signed language measure.